

## INTERNATIONAL SEARCH REPORT

 International application No.  
PCT/KR2005/000795

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC7 G02F 1/1335**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G02F G02B F21V

 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 Korean Patents and applications for inventions since 1975,  
 Korean Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

KIPO DB

search term: optical film, particle, damage, layer, spherical

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 2002-0069110 A (KEIWA INC) 29 August 2002 See the whole document	1-14
Y	KR 2003-0077472 A (KEIWA INC) 01 October 2003 See the whole document	1-14
Y	US 2002/012169 A1 (KASHIMA KEIJI) 31 January See the whole document	1-14
Y	US 2003/180529 A1 (KIMOTO CO., LTD) 25 September 2003 See the whole document	1-14

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

29 JUNE 2005 (29.06.2005)

Date of mailing of the international search report

30 JUNE 2005 (30.06.2005)

Name and mailing address of the ISA/KR


 Korean Intellectual Property Office  
 920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
 Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

YANG, Jae Seok

Telephone No. 82-42-481-5988



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/KR2005/000795

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 2002-0069110 A	29-08-2002	US 2004/0047163 A1 JP 2003-323609 A	11-03-2004 08-11-2002
KR 2003-0077472 A	01-10-2003	JP 2004-004600 A	08-01-2004
US 2002/012169 A1	31-01-2002	JP 11-295523 A KR 1999-0082877 A	29-10-1999 25-11-1999
US 2003/180529 A1	25-09-2003	JP 2003-279711 A KR 2003-0077976 A	02-10-2003 04-10-2003

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference OPK05013-PCT	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/KR2005/000795	International filing date ( <i>day/month/year</i> ) 18 March 2005 (18.03.2005)	Priority date ( <i>day/month/year</i> ) 19 March 2004 (19.03.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant KOLON IND. INC./KR		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 338 82 70	Date of issuance of this report 19 September 2006 (19.09.2006)  Authorized officer  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Philippe Becamel</div>  e-mail: pt12@wipo.int
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## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

MYUNG MOON IP &amp; LAW FIRM

4F Shinwon Bldg., 648-15, Yeoksam-dong Gangnam-gu  
Seoul 135-911 Republic of Korea

PCT

REC'D 12 JUL 2005

WIPO

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 30 JUNE 2005 (30.06.2005)

Applicant's or agent's file reference  
OPK05013-PCT

## FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2005/000795

International filing date (day/month/year)

18 MARCH 2005 (18.03.2005)

Priority date(day/month/year)

19 MARCH 2004 (19.03.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC7 G02F 1/1335

Applicant

KOLON IND. INC./KR et al

## 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.  
For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

YANG, Jae Seok

Telephone No. 82-42-481-5988



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000795

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000795

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-14	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-14	NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims	NONE	NO

**2. Citations and explanations :**

The claimed invention relates to an optical film comprising an optically structured layer; and a damage prevention layer.

Documents are cited in the International Search Report:

D1: KR 2002-0069110 A  
D2: KR 2003-0077472 A  
D3: US 2002/012169 A1  
D4: US 2003/180529 A1

According to the present invention, essential technical features of the invention are as follows.

- a) A damage prevention layer is formed on the second surface of the optically structured layer.
- b) A damage prevention layer is composed of a transparent polymeric material and a plurality of spherical organic or inorganic particles distributed in the transparent polymeric material.
- c) A damage prevention layer has protruding surface portions which are formed by the spherical organic or inorganic particles protruding from the transparent polymeric material.

Claims 1-14 are not considered to involve an inventive step.

D1-D4 disclose the advantage that the prism structure and the opposite surface of the optical film are prevented from damage due to the external impact, vibration and friction because of a damage prevention layer. Furthermore D1-D4 obviously describe the above the features a), b) and c). Although D1-D4 do not directly disclose the features: (c) a plurality of three-dimensional structures are formed on the first surface; and (d) the protruding surface portions of the damage prevention layer are formed to have a height corresponding to 50% or less of the diameter of the spherical particles, the above features (c) and (d) belong to the subject matter that would have been obvious to a person skilled in the art through D1-D4.

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

MYUNG MOON IP &amp; LAW FIRM

4F Shinwon Bldg., 648-15, Yeoksam-dong Gangnam-gu  
Seoul 135-911 Republic of Korea

PCT

REC'D 12 JUL 2005

WIPO

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 30 JUNE 2005 (30.06.2005)

Applicant's or agent's file reference  
OPK05013-PCT

## FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2005/000795

International filing date (day/month/year)

18 MARCH 2005 (18.03.2005)

Priority date(day/month/year)

19 MARCH 2004 (19.03.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC7 G02F 1/1335

Applicant

KOLON IND. INC./KR et al

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- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
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## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

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For further options, see Form PCT/ISA/220.

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Korean Intellectual Property Office  
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Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

YANG, Jae Seok

Telephone No. 82-42-481-5988



WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/KR2005/000795

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a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000795

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-14	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-14	NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims	NONE	NO

**2. Citations and explanations :**

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Documents are cited in the International Search Report:

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D2: KR 2003-0077472 A  
D3: US 2002/012169 A1  
D4: US 2003/180529 A1

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Claims 1-14 are not considered to involve an inventive step.

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From the INTERNATIONAL BUREAU

**PCT**NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

To:

MYUNG MOON IP & LAW FIRM  
4F Shinwon Bldg.  
648-15 Yeoksam-dong  
Gangnam-gu  
Seoul 135-911  
RÉPUBLIQUE DE CORÉE

(PCT Administrative Instructions, Section 411)

Date of mailing (day/month/year) 04 July 2005 (04.07.2005)	
Applicant's or agent's file reference OPK05013-PCT	IMPORTANT NOTIFICATION
International application No. PCT/KR2005/000795	International filing date (day/month/year) 18 March 2005 (18.03.2005)
International publication date (day/month/year)	Priority date (day/month/year) 19 March 2004 (19.03.2004)
Applicant KOLON IND. INC./KR et al	

1. By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).

2. (If applicable) The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

3. (If applicable) An asterisk (\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as the priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date	Priority application No.	Country or regional Office or PCT receiving Office	Date of receipt of priority document
19 March 2004 (19.03.2004)	10-2004-0019001	KR	30 June 2005 (30.06.2005)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer <b>Sébastien CLAVERI</b> Facsimile No. (41-22) 338.70.90 Telephone No. +41 22 338 8271
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Form PCT/IB/304 (January 2004)

CH4E2XTH